# A Preliminary Review of the agile Group of Podium Fabricius (Hymenoptera: Sphecidae) 

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ABSTRACT


#### Abstract

The agile species group of Podium Fabricius is characterized, and a key to the 4 included species, agile Kohl, friesei Kohl, plesiosaurus (Smith) and trigonopsoides Menke, a new species, is provided. The last species is described as new from Brazil. A lectotype is designated for agile.


The species groups of Podium Fabricius are outlined in "Sphecid Wasps, A Generic Revision"' by R. M. Bohart and A. S. Menke, which is now in press. Since completion of the manuscript, an unusual new species belonging to the agile group has been discovered. Because the members of this assemblage are poorly known, it seems useful to supplement the description of the new form with a brief review of the group. Two species are known only from single females so that a comprehensive treatment is not feasible at this time.

The agile group contains the most atypical members of Podium. The long collar and prognathus head of the included species suggest at first glance that they belong in the genus Trigonopsis Perty. This resemblance is heightened by the broad separation (equal to or greater than length of oral cavity) of the hypostomal carina and lower ends of the occipital carina, a feature not found in other Podium, but a characteristic of the closely related genus Trigonopsis. The agile group does not have the long episternal sulcus, nor the longitudinally bisected and transversely ridged dorsomedian propodeal groove found in all Trigonopsis, characters which separate the genus from Podium; thus the agile group is properly placed in Podium where it has the status of the most highly
specialized section of the genus. An arcuate intercoxal carina or ridge is present between coxae II and III in all agile group species, a feature that is absent in other Podium except two species in the Fumigatium group. Interestingly, the intercoxal carina is universal in Trigonopsis. Species of the agile group lack the patch of short, dense setae which is found at the base of tergum I in all other Podium species. Tarsal plantulae are absent in the agile group, but the same is true of the related rufipes group of Podium. The first recurrent vein typically is received by submarginal cell I or sometimes is interstitial between I and II in the agile group, but this is true also of the rufipes group. In rare examples the first recurrent may end just inside submarginal II.

Three species are currently assigned to the agile group, to which I now add a fourth.

## Podium trigonopsoides Menke, new species

(Fig. 4, 6, 7, 14, 15)
HOLOTYPE MALE: Color.-Black with no obvious metallic sheen, mandible, labrum and backside of clypeus light amber, lower surface of scape obscurely yellowish, clypeus narrowly pale along free margin lateral to teeth, palpi brown, inner face of forefemur brownish except at basal fifth, foretibia and basitarsus brown, the latter obscurely so towards apex, wings yellow, forewing with narrow infuscate spot beyond marginal cell, hindwing apex weakly infuscate.

Vestiture - Body, except gaster and apical half of petiole, mostly covered with sparse, erect, pale hair; clypeus and lower frons along orbits with dense, appressed pale gold hair which becomes sparser dorsad, thorax without conspicuous appressed hair but scutum, basalar lobe, upper metapleural area, and base of propodeal dorsum with gold patches in certain lights; propleuron, forecoxae beneath and adjacent mesopleural venter, and mesopleural venter in front of midcoxae covered with appressed silver hair which is visible in certain lights; gastral sterna II-V covered with microsetae which dull the integument.

Structure.-Body greatly elongate, especially head, pronotum, mesopleura, propodeum and petiole (Fig. 7); head sparsely, shallowly punctate, length measured from clypeal tooth apex to occipital carina a third greater than head width; inner orbits essentially parallel, ratio of lower and upper interocular distances $=17: 17.5$; frontal line absent except for a shallow, dimple-like depression near midocellus; flagellomere II slightly more than one half length of I, the latter slightly longer than upper interocular distance, flagellomeres without placoids or tyli; clypeus with three teeth (Fig. 15), the central one shortest; hypostomal carina complete, forming a $V$, its apex separated from ends of occipital carina by distance equal to length of oral cavity; upper part of occipital carina lamelliform, most strongly so laterally; width of collar at middle four-fifths median length; collar sparsely, shallowly punctate, with weak mesal, longitudinal sulcus except stronger posterad where collar is weakly bituberculate; scutum with notauli and single admedian line which are slightly longer than length of metanotum; scutal punctation similar to collar except for two linear groups of larger, deeper, round, close punctures posterad; scutellum and metanotum punctured like collar; propodeal dorsum with close, large, deep, round purictures (contiguous to 1 diameter apart) except impunctate aiong midline which is not sulcate, punctures becoming sparser posterolaterally where integument is smoother and more polished, punctures extending on to sides where they give way posterad to vertical ridges; posterior face of propodeum only slightly descending from dorsum, slightly concave, impunctate, but strongly transversely ridged; mesopleuron more deeply and closely punctured than collar, especially dorsoposteriorly, scrobal sulcus weakly impressed, mesopleural venter concave in lateral profile (Fig. 7), midventral line a simple, shallow sulcus; metapleuron impunctate, petiole punctate, most closely so on basal third, petiole curving upward in lateral profile (Fig. 7), thickening posterad, venter becoming knife-edged posterad (Fig. 7a); petiole longer than hindbasitarsus, ratio $=5: 3.5$; lower surfaces of trochanters and femora closely punctate; midcoxae separated by distance equal to basal petiole width; marginal cell apex narrowly rounded, appendiculate, the appendix separated from wing margin, length of stigma as measured on wing margin about half marginal cell length; submarginal cell II not strongly narrowed
anteriorly, ratio of basal and anterior veinlet lengths $=9: 7.5$; outer veinlet of submarginal cell III not parallel with basal veinlet, the two obviously convergent; submarginal cells I and II each receiving a recurrent vein (Fig. 6); penis valve head as in figure 14.

Length. -23 mm .
FEMALE: Color.-Similar to male except clypeus yellow across entire free margin and forefemur and tibia lighter brown.

Vestiture.-Erect hair shorter and sparser than in male, especially on head, erect hair extending full length of petiole except absent on apical half of dorsum; appressed facial hair silver; appressed thoracic hair like male except that of mesopleural venter continuous between front and middle coxae; gastral sterna II-IV covered with microsetae which dull the integument.

Structure.-Similar to male except as follows: punctation of head very faint, fronial line faint, no dimple below midocellus; clypeus with five large teeth, the middle one the most prominent (Fig. 4), the margin lateral to and some of the intervals between large teeth with a number of small teeth; hypostomal carina incomplete, extending only about half distance to mandible socket; width of collar at middle three-fifths median length; dorsum of collar with only a posteromedian indentation; scutum without two linear groups of large, close punctures posterad; posterior face of propodeum strongly concave; mesopleural venter weakly concave in profile; petiole rather uniformly punctate along entire length, petiole straight, not thickened nor knife-edged posterad, length slightly more than hindbasitarsus, ratio $=5: 4$; forefemur sparsely punctate; length of stigma two-fifths length of marginal cell.

Length. - 24-26 mm.
Variation: The paratype males differ from the holotype in being larger, 28-29 mm . long, and in having a better developed central clypeal tooth although it still is not as long as the lateral teeth. The face in these 2 males has a fine frontal line. The scutum lacks the well defined posterior, linear series of large pits found on the type. The posterior thickening of the petiole is more pronounced in the two male paratypes.
The wings vary among the 6 paratypes. In 1 male the veinlet between submarginal cells I and II is missing and the 2 cells are thus confluent. In the other male and one of the females, the first recurrent vein is interstitial between submarginals I-II or nearly so.

Specimens studied.-Holotype $\boldsymbol{o}^{\hat{n}}$ : Nova Teutonia, Santa Catarina, Brasil,


1 agile ?


3 plesiosaurus 9


2 friesei 우


4 trigonopsoides ㅇ


5 plesiosaurus


6 trigonopsoides

Fig. 1-4, faces ( 1 and 3 are holotypes); Fig. 5-6, part of right forewing (5 is holotype).

XII-1968, Fritz Plaumann (deposited in the Entomology Collection of the University of California, Davis, California). Two o ${ }^{\prime}$ and $4 \circ$ topotypical paratypes collected by Plaumann III-'67, XII-'68 and II-'69. Paratypes in the Museum of Comparative Zoology, Cambridge, Mass., University of California, Davis, and the U. S. National Museum, Washington, D.C.

Discussion.-The yellow, unbanded wings and nearly quadrate second submarginal cell (Fig. 6) distinguish trigonopsoides from other species of the agile group. The wings are clear but banded in the other 3 species and submarginal cell II is strongly narrowed towards the marginal cell (Fig. 5). The 3-toothed male clypeus is unusual for Podium, but some males of friesei have a weak median tooth also, so the 3-toothed clypeus may be peculiar to the agile group. Discovery of the male of plesiosaurus and agile will settle this point.

## Podium plesiosaurus (Smith)

 (Fig. 3, 5, 8)1873. Ann. Mag. Nat. Hist. (4)12:54. Holotype ㅇ, Ega (= Tefé, Amazonas), Brazil (British Museum, London).

The elongate head and collar prompted Smith to describe this species in Trigonopsis, but I have examined the type and it is simply an unusually elongate Podium, having all of the characters of the genus. Podium plesiosaurus is still known only from the type. The species is the same size as friesei and is similarly colored except that the gaster is red. The narrow face, clypeal dentition (Fig. 3) and much more elongate collar (Fig. 8) are diagnostic. The stigma is proportionally longer in plesiosaurus than in the other species of the agile group. It is about three-fourths the length of the marginal cell, both measured along the wing margin (Fig. 5). The stigma varies from slightly less than half to slightly more than half the marginal cell length in the 3 other species of the group.

## Podium agile Kohl

(Fig. 1, 9, 11)
1902. Abhandl. K. K. zool.-bot. Ges. Wien 1:43. Lectotype 우, Cayenne (Naturhistorisches Museum, Vienna), present designation.

Kohl based his description on 2 female syntypes, 1 with a black gaster, the other with a partially red gaster. The latter was deposited in the Institute Royal des Sciences Naturelles de Belgique, Brussels, the other in Vienna. I have examined the red gaster specimen and selected it as the lectotype. The Brussels specimen may be destroyed since it could not be found by the museum authorities in 1972. The unavailability of the all-black syntype makes it impossible to verify that it is conspecific with the lectotype and also to confirm gastral color variation in agile. However, in the lectotype tergum I is black except around the margins, and terga V-VI are partially suffused with black which indicates that the entire gaster may indeed be black in parts of the range of the species.

Podium agile is quite similar to friesei structurally, the principle differences being the posteromedian hump of the collar in the former (Fig. 11, see also Fig. 77 in Kohl, 1902). Other slight distinctions are noted in the key to species that follows. At present agile is known only by the lectotype from Cayenne, French Guiana. Kohl's other specimen came from Bahia, Brazil.

## Podium friesei Kohl

(Fig. 2, 10, 12, 13, 16)
1902. Abhandl. K. K. zool.-bot. Ges. Wien 1:96. Holotype on, Guayaquil, Ecuador (Naturhistorisches Museum, Vienna).
Podium friesei looks like a small slender specimen of rufipes at first glance, but the hypostomal and occipital carinae are contiguous in the latter. P. friesei is the commonest agile group species in collections and it has a broad geographic range. In addition to Kohl's type from Ecuador, I have seen material, including the previously unknown female, from Oaxaca,


Mexico; Honduras; Trinidad; and Paraguay.

Proceeding from north to south in the species range there is a trend for reduction in the amount of red on the legs. The most extensively red legs are found on Mexican examples. In these the foreleg is red except for the coxa, a dark area on the dorsum of the trochanter and the last 4 tarsomeres, all of which are black or brownish. The midleg is similar but the basitarsus is brownish apically. Only the femur and tibia of the hindleg are red, and the inner basal fourth of the female femur is black also. The mid trochanter and basitarsus are completely black in the Honduras examples, and in these the hindfemur is black on its basal one-fourth and the tibia is black except at the apex.

In the Ecuador type only the tibia, trochanter, and dorsum of the femur of the foreleg are red. The midleg trochanter is black beneath and the femur is black on the basal half of the venter, otherwise the leg is colored like the foreleg. The hindleg is black except for the apical two-fifths of the femur and a reddish area on the inner apex of the tibia. The Trinidad specimen is similar except the hindleg is totally black. The Paraguay specimen is also colored like the type except that red of the hindleg is confined to the apical fifth of the femur.

There is considerable variation in forewing venation in friesei. In the type, the first recurrent vein is interstitial between submarginal cells I-II in the right wing, but in the left wing the vein ends on

## Preliminary key to the agile group of Podium ${ }^{1}$

1. Face broad, head length as measured from apex of clypeal teeth to occipital carina subequal to head width (Fig. 1-2, 16); flagellomere I length less than upper interocular distance
Face narrow, head much longer than broad (Fig. 3-4); flagellomere I equal to or longer than upper interocular distance
2. Upper interocular distance slightly greater than lower interocular distance (15:14) in female; female collar evenly rounded posteriorly in profile (Fig. 12); female petiole slightly longer (as measured dorsally from tergal base to insertion) than hindmetatarsus $(23: 20)$, venter and sides thickly covered with erect setae only basally, setae sparser and shorter posterad, petiole sparsely, finely punctate, strongly upcurved posterad (Fig. 10); at least front and middle femora and tibiae mostly red, gaster black; length $14-16 \mathrm{~mm}$. [male flagellomeres I-VIII with tyli, clypeus with 2 or 3 teeth, central one sometimes absent, Fig. 16]
] . . . . . . . . . . . . . . . friesei Kohl
Upper interocular distance slightly shorter than lower interocular distance (19:20) in female; female collar with posteromedian hump (Fig. 11); female petiole much longer than hindmetatarsus (35:28), venter and sides evenly and thickly covered with erect setae and rather densely, coarsely punctate, not strongly upcurved posterad (Fig. 9); legs black except inner apex of forefemur and inner surface of foretibia reddish, gaster red (always?) beyond tergum I; female 21 mm . long agile Kohl
3. Flagellomere II length much less than upper interocular distance (Fig. 4); frons sparsely, shallowly punctate; submarginal cell II not strongly narrowed on marginal cell, nearly square (Fig. 6); wings yellow, without clouding through marginal cell and submarginal cell II; gaster and mid and hindlegs black; length 23-29 mm.; [male antenna without placoids or tyli, clypeus with 3 teeth] . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . trigonopsoides Menke
Flagellomere II about equal to upper interocular distance (Fig. 3); frons with dense, round punctures (separated by about a puncture diameter); submarginal cell II strongly narrowed on marginal cell (Fig. 5); wings clear but forewing with brown band through marginal cell and submarginal cell II; gaster and foreand midlegs red except black basally; length $16 \mathrm{~mm} . . . . .$. plesiosaurus (Smith)

[^0]I. In the Mexican and Honduran material the endpoint of the first recurrent vein varies from submarginal I to II. The first recurrent ends well within submarginal I in the Trinidad and Paraguay material.

The collar has a very faint median longitudinal impression in the male, but the female collar has no impression or at most a posterior indentation. The male clypeal margin has two large teeth between which a weak third tooth is sometimes present
(Fig. 16). The female face is shown in Fig. 2.

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[^0]:    ${ }^{1}$ Males of agile and plesiosaurus are unknown, but key characters should work at least for the latter.

